REMARKS:

Entry of the foregoing amendments, reconsideration and reexamination of the subject application, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

By the present amendments, all of the pending claims are cancelled in favor of new Claims 55 through 99.

Turning now to the Office Action, Applicants acknowledge their previous Election of Species, particularly of solid composition according to Claim 1, comprising the enumerated unsaturated fatty acid alcohols, alkylene glycol, viscosity enhancing agent, and biologically active agent as recited in the official Office Action. It is anticipated that this election of species requirement will be withdrawn upon an indication that the elected subject matter is free of the prior art. Also, Applicants respectfully submit that all of the newly-submitted claims correspond to the same invention, and should therefore be examined together.

Claims 1 to 4, 7 to 11, 16, 17, 22, 24 to 28, 32 to 40, 42, 47 to 49, and 52 to 54 were rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over Wang et al, USP 4,299,828, and Cooper et al, USP 4,552,872. This rejection is respectfully traversed to the extent it may be applicable to the claims as amended. However, prior to specifically addressing the rejection, the present invention and its inherent advantages are

briefly summarized below. It is believed that this will facilitate an understanding as to why the claims are not fairly suggested by the prior art.

In particular, the present invention pertains to a biologically active composition which is in the form of a stick, which comprises a biologically active agent which is dissolved in a particular novel carrier system which includes an unsaturated fatty acid alcohol which is dissolved with an alkaline glycol as a solvent for the biologically active agent and a stiffening agent therefor, which imparts stick consistency to the composition, wherein the alkaline glycol is preferably present in an amount of no more than 12%. Such a composition is especially well suited as a medicament, particularly for treatment of dermatological conditions because it possesses superior bioavailability properties.

More specifically, the solid stick compositions according to the invention do not rely upon mechanical properties to ensure uniform distribution of the biologically active agent. By contrast, the biologically active agent is distributed in a lipid carrier, but not in a suspended or dispersed state, but rather in a dissolved state. This is achieved notwithstanding the generally poor solubility of biologically active agents formulated in stick compositions because of the type of stick formulation claimed herein, which provides for substantially complete dissolution of biologically active agents. In general, the biologically active agent will comprise a lipophilic, i.e., lipid soluble compound. Of particular interest are drugs and medical compounds, however, the present invention is applicable broadly to biologically active agents as conventionally known in the art. Such

compositions are not fairly suggested by the cited references, alone or in combination. By contrast, the prior art fails to fairly suggest a solid composition as claimed, wherein a biologically active is brought into solution by such means which prevents sedimentation thereof during manufacture and during storage, and which does not result in loss of biological activity of the compound upon storage. Particularly, by a judicious selection of solvents in combination with the viscosity enhancing agent in the form of a waxy substance and plasticizing oils present in the percentages recited in new Claim 55, it has been found that active agents can be dissolved substantially completely such that a homogeneous product, which remains homogeneous during manufacture and storage, is achieved.

By contrast, Wang et al does not teach or suggest the solubilization of an active agent into a solution, i.e., a one-phase system. Indeed, it is clear from Col. 3, lines 35 to 40, of the reference that the active agent is dispersed and is not dissolved in the formulation. This teaching would suggest that the active agent is either dissolved on the solvent and dispersed in the formulation, or is precipitated in the part of the formulation which does not contain solvent. However, irrespective thereof, the active agent, unlike that of the present invention, will be unevenly distributed in the formulation. This will necessarily give rise to sedimentation or floatation during storage. The consequence of such sedimentation or flotation is the creation of domains of higher or lower concentrations of the agent. Therefore, such composition does not possess the desirable

bioavailability and homogeneous characteristics of that of the present invention. In fact, the medical consequences of such differences in concentration across the dosage system can be quite severe. Particularly a non-homogeneous formulation can be ineffective because the requisite dosage is not delivered to a target site. Also, such composition can be ineffective because it can result in undesirable side effects not normally associated with the product (because an undesirable high or low concentration is delivered to the target.)

Also, as discussed above, the compositions of Wang et al further differ in their concentrations of the alkylene glycol. In fact, Wang et al is quite clear that the enhanced efficacy of the disclosed formulations, which contain propylene glycol, is attributable to a maximum amount of propylene glycol being present, which is 8%. Instead, in the present invention, the amount of alkylene glycol which is necessary to produce a homogeneous composition is at least 12%. Therefore, based on the foregoing, this reference fails to teach or suggest compositions according to the invention.

Moreover, Cooper et al does not cure the deficiencies of Wang et al. Indeed, Cooper et al is even more divergent than Wang et al to the compositions of the present invention. Particularly, in Cooper et al there is no teaching or suggestion relating to the manufacture of a solid composition much less a stick-type formulation having the homogeneous properties of the present invention. Rather, the administration form of the reference comprises an ointment or cream, which is quite distinct from a stick

formulation. Also, the composition of Cooper et al differs further in the amount of viscosity-enhancing ingredients, i.e., waxes, which are present. Particularly, the amount of waxes is limited to 12% and more preferably comprises 5% of the total composition. This may be appreciated upon review of Col. 10, lines 49 to 54, of the reference. By contrast, in the stick-type formulations of the present invention, the amount of waxy substances is substantially higher, ranging from 15 to 55%. Also, in Cooper et al it should be noted that the reference particularly indicates that an increased amount of viscosity-enhancing compounds of the same or similar nature will interfere with the efficacy of the formulation. Therefore, this reference actually teaches against stick-type formulations according to the invention. However, quite surprisingly, it has been found by the present inventors that incorporation of the low amounts of viscosity-enhancing agents which are reported in Cooper et al are not sufficient to produce a solid formulation in the form of a stick having the homogeneic properties of the present invention.

Still further, Cooper et al discloses that the presence of "normal" C_{16} to C_{20} fatty alcohols should be avoided. The Patentees indicate that the reason for such avoidance is that this results in a decrease in the effect of the absorption-enhancing properties of the propylene glycol and oleic acid. Moreover, the Patentees further indicate that fatty acids, i.e., mono- and dicarboxcylic acids having a carbon length of C_4 to C_{20} are unsuitable in the formulation substantially for the same reasons. This may be appreciated upon review of Col. 10, line 55, of the patent. Instead, in the present invention, at least two percent

of a plasticizing oil is required. By contrast, in Cooper et al, less than one percent and more preferably less than 0.5 percent of such a plasticizing oil is present. Therefore, based on at least these differences, namely the significant differences in the amount of wax, as well as plasticizing oil, as well as the type of fatty alcohols, Cooper et al similarly fails to teach or suggest compositions according to the present invention. Based on the foregoing, withdrawal of the §103(a) rejection based on the cited references is respectfully requested.

Also, the Examiner is respectfully advised that Applicants' representative is in the process of scheduling a personal interview with the Examiner. Therefore, if the Examiner reaches this application for action prior to such interview, it would be appreciated if the Examiner would call the undersigned so that prosecution of this application may be expedited.

Respectfully submitted,

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